

Outgoing
M/045/0078



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State of Utah

DEPARTMENT OF NATURAL RESOURCES

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Division of Oil, Gas and Mining

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July 16, 2012

Rick Havenstrite
Desert Hawk Gold Corporation
7115 North Division Street, Suite B #351
Spokane, Washington 99208

Subject: Sixth Review of Notice of Intention to Commence Large Mining Operations, Desert Hawk Gold Corporation, Kiewit Project Mine, M/045/0078, Tooele County, Utah

Dear Mr. Havenstrite:

The Division of Oil, Gas and Mining has completed a review of your Notice of Intention to Commence Large Mining Operations (NOI) for the Kiewit Project Mine, which was received July 6, 2012. The attached comments will need to be addressed before tentative approval may be granted. As stated at the beginning of the surety comments, there are details of the surety calculations that the Division anticipates resolving in a meeting between the Division's engineer, Wayne Western, and your consultant. Some of these details are not listed in the review.

The comments include suggested ways to solve problems related to reclamation. The Division acknowledges there are many options for completing reclamation and welcomes Desert Hawk Gold Corporation to put forth their solutions. Although the Division has attempted to make each review as comprehensive as possible, a cover-to-cover review will be needed when a complete copy of the NOI is received.

The Division will suspend further review of the Notice of Intention until your response to this letter is received. If you have any questions in this regard please contact me at 801-538-5261 or Leslie Heppler at 801-538-5257. Thank you for your cooperation in completing this permitting action.

Sincerely,

Paul B. Baker
Minerals Program Manager

PBB:lah:eb

Attachment: Review

cc: Keith Moeller keith@cliftonmining.com

BLM - SAllen@blm.gov

DEQ - MNovak@utah.gov

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**Sixth REVIEW OF NOTICE OF INTENTION
TO COMMENCE LARGE MINING OPERATIONS**

Desert Hawk Gold Corporation
Kiewit Project
M/045/0078
July 16, 2012

General Comments:

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
1	General	Submittal should be formatted to easily incorporate additional revisions and amendments. All revisions should refer to comment number and also page where revisions were made.	lah	
old-1				
2	General	Additional comments from the Division can be generated in the future based on submittals received in the future. A cover-to-cover review will need to be done on the final plan before it is stamped.	lah	
old-2				
3	Appendices	Comment #7 from the December 21, 2011, review stated, "Appendix V – Re-label appendix as Geochemical and Analytical Data (geotechnical is soil)." This has not been done. Please retitle the section when DHG adds mitigation to the NEPA document. (as per PBB, this will be done in the future).	lah	
old-3				
4	Appendices	Appendix XIV—Contractor permits. Please include these permits prior to beginning construction. At this time please list permits that are anticipated to be needed. The Division has received a placeholder, but it does not include the list of permits that will be needed.	lah	
old-5				
5	Appendices	Appendix XVI—DEQ Construction Permits. These permits will be needed prior to construction beginning. At this time please list permits that will be needed.	lah	
old-6				
6	Omission	The Division will need to receive a copy of the Air Quality Approval Order that includes the overall project as opposed to permits for mobile equipment.	lah	
old-7				
7	Appendices	Appendix XVII—Correspondence – At this time list the permits that are anticipated to be needed from all local, state and federal agencies.	lah	
old-8				
8	Appendices	Comment #18 from the December 21, 2012, review asked that Appendix XXI be stamped by the Engineer of Record. While the Division cannot make this requirement, it is being requested to assure the Division that the input parameters for the draindown model were done correctly. The Division recognizes that the model itself was not created by either DHG or its consultants and cannot be certified as being correct, but there should be a basis for the input that could be stamped. In particular, the model parameters show the height of the heap to be 60 feet where the plan shows it as 100 feet during draindown. This apparent discrepancy needs to be explained or reconciled.	lah PBB	
old-13				
9	Appendices	Appendix XXII has been numbered and resubmitted, but please include a readable map with the drill hole locations. This comment was included in the December 21, 2012, review.	lah	
old-14				

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Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
10	Figures 3 and 3A	Information available to the Division indicates a portion of the northeast part of the heap is on BLM land and not patented mining claims. According to the information from the BLM, this land is in the south part of claims IP 15 and Pearl 357. One of the maps in Appendix III indicates there is a private exchange application for this area, but this application has expired. The Division can provide further information upon request. Please either revise the maps or provide documentation that the information on these maps is correct.	pbb	

R647-4-105 - Maps, Drawings & Photographs

105.1 - Topographic base map, boundaries, pre-act disturbance

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
11 old-24	Page 13	In the July 6, 2012, submittal, the storm event was changed to be in line with the correct amount of rainfall, 3.41 inches, but the maximum amount of solution to drain out, 4,320,000 gallons, was changed to 2,900,000 gallons, without any explanation of how this new number was generated. Please provide an explanation.)	tm	
12 old-29	Figure 11	The re-routed existing road is considered as disturbance. During a meeting on June 25, 2012, it was agreed that Figure 11 would be modified to show that the haul road would be reclaimed to premining conditions. This needs to be done.	lah	

105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
13	Cross sections – all	The bond could be more accurately calculated if the cross sections showed more detail. Bonding will be done using a worst-case scenario.	lah	

105.4 - Photographs

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
14 old-36	Appendices	The Division has previously requested a map showing locations where photos were taken, and the operator has agreed to provide this map. The Division will not consider this a deficiency in the plan but will expect the operator to provide the map at some point in the near-future.	Pbb	

R647-4-106 - Operation Plan

106.2 - Type of operations conducted, mining method, processing etc.

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
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Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
15 old-38	Page 8 Para 3	Refer to this sentence: "Therefore Acid Rock Drainage (ARD) is not likely to be a problem at this mine site." Update this section to briefly include other pertinent information justifying this conclusion, since the limited Kiewit sampling and analysis by ALS Chemex was inadequate by itself to reach this conclusion. (The July 6 revision needs to acknowledge that, not only percent sulfur but also neutralization potential determine whether material is PAG.)	pnb	

106.4 - Nature of materials mined, waste and estimated tonnages

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
16 old-50	Page 16 Para 1	As requested in the recent Review 3B (comment 4), report the general conclusions reached about the Kiewit material after the Kiewit drill logs were studied. These conclusions should be consistent with Appendix V-A. (In the July 6 revision, drill cuttings and core were identified, but not the logs.)	pnb	
17 old-52	Page 16 Para 1	As discussed in Appendix V-A, indicate that the operator will regularly test ore and waste in order to identify deleterious and acid-forming materials. Indicate that the operator will keep such records on-site and available to the Division as requested. (In the July 6 revision, ongoing testing was not identified here.)	pnb	
18 old-57	Page 16 Para 2	Since it is not typical to isolate leached ore within a leach pad in this manner, more detailed information about the plans to isolate and cap the Clifton Shears ore are needed, including provisions to avoid potential problems with slope stability of the pad slopes, encapsulation, etc. (The July 6 revision does not indicate whether any precautions will be taken to minimize the chance of puncturing the proposed liner. This may not have been clear originally.)	pnb	
19 old-59	Page 16 Para 3	Since the material handling procedures have been modified in Appendices V, V-A, and XXIII, this paragraph will need to be updated to reflect the changes made in these appendices. (See the following comment.)	pnb	
20 old-60	Page 16 Para 3	Per Appendix V-A, potentially acid generating (PAG) material will be defined based on the net neutralizing potential (NNP) and the neutralization potential ratio (NPR) (neutralization potential divided by acidification potential), and not based alone on the percent sulfides found in the material. This definition of PAG should be included here. The commitment to regular testing of ore and waste rock by whole rock chemical analysis and acid-base analysis should also be included. (The July 6 version of the NOI text on p. 16 indicates that the NCV method will be the only method for defining PAG material. The Sobek ABA method is used to define PAG on p. 5 of Appendix V-A, and is also to be used to identify material suitable for encapsulating PAG in the NOI text and appendices. In order to be consistent with the listed appendices, either parts of the appendices or the NCV statement on p. 16 will need to be changed. Refer to comment 21 of the Division's May 1, 2012 review. Regular testing on benches will need to be spacially meaningful.)	pnb	

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July 16, 2012

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
21 old-63	Page 16 Para 5 Now page 17 and figure 19	Comment #63 from the December 21, 2011, review stated, "It is in the operator's best interest to define the exact locations of areas that have been previously affected by mining and exploration activities and of those areas to be affected in the future. This avoids confusion and misunderstanding with the regulatory agencies." The text has now been changed, but it is not clear from Figure 19 which roads will be fully or partially reclaimed. As per phone conversations with the BLM, the remaining bond from Dumont was for the reclamation of these roads. Please modify the legend. This comments was not addressed in the June 25 or July 6, 2012, submittals.	lah	

106.5 - Existing soil types, location, amount

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
22 old-64	Appendix VIII, map on unmarked page 8	Please supply a more legible map. It is very difficult to distinguish soil type boundary lines from roads and other features.	PBB	

106.8 - Depth to groundwater, extent of overburden, geology

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
23 old-71	Omission	Appendixes XIV and XV will need to be submitted with the final version of the plan.	lah	
24 New	Page 19 Para 3	Address how the water in the Yellow Hammer Mine will impact reclamation.	lah	
25 Old-75	Page 21 para 2	Since sampling of the Yellow Hammer material provided to the Division has been limited, provide additional basis for the conclusion that "Residual sulfides do not exist in sufficient quantities to become potential ARD problems" and that "Host rock...will exhibit sufficient neutralizing potential should sulfides be encountered." The samples may suggest that ARD won't be a problem, but they don't show that ARD won't be a problem, since a limited number of samples were taken. Remove the absolute nature from the text, unless it can be justified. The "Host rock..." statement needs to be changed, as originally noted, since waste rock has not been characterized.	pnb	
<p>The following items can be included as a condition to mining the Yellow Hammer and B and C Zones: A statement indicating plans for characterizing waste and ore at the Yellow Hammer and B and C Zones as a condition of the permit approval prior to mining under the large mine permit should be included. A map indicating the location of the rock characterization samples needs to be provided. Plans should include a statistically significant number of samples that are spatially representative of the deposits.</p>				

106.9 - Location & size of ore, waste, tailings, ponds

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
26 Old-79	Page 23 para 2	Change this paragraph to be consistent with the revised Appendix V-A. Refer to regular sampling and analysis. As discussed, using visual estimates of sulfide percentages to determine if a material is potentially acid forming is inappropriate. This paragraph and the definition of PAG is inconsistent with Appendix V and p 16 of the NOI text. Revise accordingly. Regular testing on benches will need to be spacially meaningful.	pnb	

R647-4-109 - Impact Assessment

109.1 - Impacts to surface & groundwater systems

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
27 Old-82	Page 25 para 3	Identify the concerns with Kiewit ore, and indicate what measures are proposed to mitigate potential problems. The presence of and potential impact to shallow alluvial groundwater is not identified in this section. Encapsulation of PAG material in traditional waste rock is not expected to "cut off the air (oxygen)", unless other actions are taken besides than those specified in Appendix V.	pnb	
28 Old-83	Page 25 para 3	Identify the concerns with Clifton ore, and indicate what measures are proposed to mitigate potential problems. It is expected that some mobilization of metals due to contact with slightly acidic water would take place. Remove the absolute nature of the statement.	pnb	
29 New	Page 25 Para 2	Suitable encapsulation of waste needs to be changed to include "lined" if DHG intends to use waste rock as noted.	lah	
30 Old-85	Omission	Please discuss the impact to the groundwater system from water use. This comment was not addressed in the June 25 or July 6, 2012, submittals, but it was in the December 21, 2011, review.	lah	

109.4 - Slope stability, erosion control, air quality, safety

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
31 Old-86	Omission	Briefly identify potential slope stability concerns for the heap leach pad, and any mitigation for impacts. Include the fine grained nature of the crushing and saturated conditions, and the geotechnical conditions of the foundation material. Page 27 of the submittal received on June 25, 2012, text notes the new slopes of the tailings will be "3H:1V", but the July 9, 2012, submittal went back to a 2H:1V slope, please submit supporting stability analyses for long term public safety. All text and maps need to be consistent. Please also clarify, both here and on page 10, that run of mine (uncrushed) ore will also likely be placed on the pad (see page 11, paragraph 4).	pnb lah	

R647-4-110 - Reclamation Plan

110.2 - Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
32 Old-88	New Figure 19	Comment # 89 of the December 21, 2011, review said, "Yellow Hammer reclamation does not represent what is currently on the ground. Based on the current excavation the pit will have to be filled in. Include a plan to revegetate more than the pit floor, which is currently under water." Through the July 6, 2012, submittal this comment has not been addressed. Please discuss in the text how the oversteepened highwall and pit lake will be handled at the Yellow Hammer for reclamation.	lah	

110.4 – Treatment, location, & disposition of deleterious materials

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
33 Old-90	Page 34, Omission	Please include or reference a discussion of how deleterious or acid-forming materials will be treated, where they will be located, and their nature. Include a reference here to other locations in the NOI text that discuss the nature of potentially deleterious mined material. Other references to the location of deleterious materials include disposal in the bottom of the pit, and this should also be included here.	pnb	

R647-4-113 – Surety

Comments about the reclamation cost estimate may not be complete. Representatives of the Division and the operator's consultant intend to meet and discuss these issues in detail.

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
34 Old-93	Reclamation cost estimate	Heap and Process Pond. Please provide detailed calculations that show the equipment costs and manpower needed to reclaim the pond and also the estimated time needed. Will wait for detailed reclamation plan before completing a review of bonding information.	WHW	
35 Old-94	Reclamation cost estimate	The topsoil placement will be done using dozers to push the material up a 2H:1V slope. Dozer productivity is greatly reduced when pushing up a slope this steep. In addition, the height of the heap leach pad is 100 feet but the push distance referred to is only 50 feet. The push distance does not appear compatible with the requirements. Will wait for detailed reclamation plan.	WHW	
36	Reclamation cost estimate	The height of the heap leach pad is 120 feet during operations but only 100 feet at final reclamation. Please include a narrative about how the heap leach pile will be reduced by 20 feet.	WHW	
37	Reclamation Cost Estimate	The surety calculations include a clay borrow area that appears to have been removed from the plan. Please remove these calculations from the cost estimate if this area will not be included.	pbb	
38		Please provide justification for heap leach draindown model parameter values. References to the 420 day draw down is not mentioned in the text.	PNB	